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## PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional)

2870-0277PUS1

	Application Number 10/808,333-Conf. #5434	Filed March 25, 2004
	First Named Inventor Kazuhito TSUKAGOSHI et al.	
	Art Unit 2826	Examiner T. N. Quach

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).

Note: No more than five (5) pages may be provided.

I am the

- applicant /inventor.  
 assignee of record of the entire interest.  
 See 37 CFR 3.71. Statement under 37 CFR 3.73(b)  
 is enclosed. (Form PTO/SB/96)

- attorney or agent of record.

Registration number 32,181



Signature

Marc S. Weiner

Typed or printed name

- attorney or agent acting under 37 CFR 1.34.

Registration number if acting under 37 CFR 1.34. \_\_\_\_\_

(703) 205-8000

Telephone number

JUL 11 2007

Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required.  
 Submit multiple forms if more than one signature is required, see below\*.



\*Total of 1 forms are submitted.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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In re Patent Application of:  
Kazuhito TSUKAGOSHI et al.

Application No.: 10/808,333

Confirmation No.: 5434

Filed: March 25, 2004

Art Unit: 2826

For: TERMINAL AND THIN-FILM TRANSISTOR      Examiner: T. N. Quach

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**PRE-APPEAL BRIEF REQUEST FOR REVIEW**

Mail Stop AF  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In response to the final Office Action mailed on January 29, 2007, Appellant respectfully requests a Pre-Appeal Brief Conference. This request is being filed concurrently with a Notice of Appeal.

**[I] Remarks**

Appellant requests withdrawal of the rejections of record as being clearly erroneous in fact and in law for the reasons set forth below.

**[II] Status of Claims**

Claims 1-20 are pending, of which claims 3-20 have been withdrawn by the Examiner.

**[III] Grounds Of Rejection To Be Reviewed**

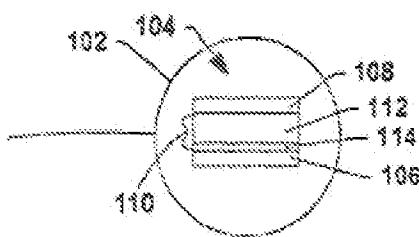
- 1) The ground of rejection to be reviewed is the rejection of claims 1-2 under 35 U.S.C. 103(a) as being unpatentable over Lyons et al. (U.S. Patent 6,825,060) in view of Awano (U.S. Patent 7,084,507) (hereinafter "Rejection (1)").

Appellant maintains the position that the Examiner has failed to establish a *prima facie* case of obviousness for at least two reasons:

- 1) The references fail to teach or suggest every element of the present invention.
- 2) The Examiner has failed to show proper motivation for modifying and combining the references of record.

The Examiner notes that the primary reference to Lyons et al. fails to teach or suggest a terminal or wiring containing a carbon nanotube in contact with an organic material, wherein a metal is in contact with a part of the nanotube but does not contact the organic material. In order to cure this deficiency, the Examiner relies on Awano. However, Awano does not cure the deficiency of the primary reference.

Lyons et al. teaches a method of making organic memory cells made of two electrodes with a controllably conductive media between the electrodes. The controllably conductive media contains an organic semiconductor layer that contains a photosensitive compound. The elements of the organic memory cells of Lyons et al. are shown in Figure 1 of this reference, reproduced below:



In the Figure above, reference number 106 represents a first electrode (metal), 108 represents a second electrode (metal), 112 represents an organic semiconductor layer, and 114 represents a passive layer.

Awano teaches a semiconductor device using a carbon nanotube, wherein the nanotube is used as a masking material for dry etching (see Awano at column 1, lines 7-21). Awano does not teach or suggest a carbon nanotube in contact with an organic material having a 6-membered carbon ring, wherein a metal contacts the nanotube but not the organic material.

Upon careful review of the cited references, it is clear that the references do not teach each and every limitation of the instant invention, namely: 1) a carbon nanotube in direct contact with an organic material 2) wherein the organic material has a 6-membered carbon ring, and 3) a metal in contact with a part of the carbon nanotube 4) wherein the organic material and the metal do not directly contact each other. Furthermore, a skilled artisan would not be motivated to modify Lyons et al. so as utilize a carbon nanotube contacting an organic material and a metal, wherein the metal and the organic material do not directly contact each other, nor would he be motivated to modify the device of Awano by utilizing carbon nanotubes on a passive layer, as this would render the device of Lyons et al. unfit for its intended purpose.

*Rejection (1): The Present Invention is Patentable over the Combination of Lyons et al. and Awano.*

Appellant notes that the cited references of Lyons et al. and Awano, alone or in combination, fail to teach or suggest each and every limitation of the present invention.

Lyons et al. teach an organic semiconductor layer (112) comprising an organic semiconductor material and further comprising a variety of organic structures that can have 6-membered carbon rings, such as a carbon nanotube. Based on the disclosures of Lyons et al. at column 16, line 66 to column 17, line 27 and column 17, line 64 to column 18, line 8, the

teachings of Lyons et al. could be interpreted in two different ways (discussed below), none of which renders the present invention obvious.

One arguably possible interpretation of the teachings of Lyons et al. is that Lyons' organic semiconductor layer (112) is equivalent to the presently claimed carbon nanotube. In such case, Lyons et al. would fail to teach that the organic semiconductor layer (112) is in direct contact with an organic material having a 6-membered carbon ring, as required by the present invention, since the passive layer (114) of Lyons et al. is not described as possibly being made of an organic material having a 6-membered carbon ring.

A second possible interpretation of the teachings of Lyons et al. is that the organic semiconductor layer (112) is equivalent to the instant organic material having a 6-membered carbon ring. In such case, however, the passive layer (114) of Lyons et al. must necessarily be a carbon nanotube to have the instantly claimed configuration, wherein a carbon nanotube is in direct contact with a metal and an organic material having a 6-membered carbon ring and the metal is not in contact with the organic material. However, as is clear from the disclosure of Lyons et al., passive layer (114) is not equivalent to Appellant's carbon nanotube. A carbon nanotube does not have the required properties of Lyons' passive layer (114), such as two relatively stable oxidation states (see Lyons et al. at column 17, lines 15-23).

Evidently, the cited references, alone or in combination, fail to teach or suggest every limitation of the instant invention. For this reason alone, this rejection should be withdrawn.

Furthermore, Appellant notes that one skilled in the art at the time of the invention would not be motivated to combine the organic memory cells of Lyons et al. with the semiconductor device of Awano, absent impermissible hindsight gleaned from Appellant's disclosure.

The Examiner asserts that one skilled in the art would be motivated to include a carbon nanotube in the terminal disclosed by Awano "since such is conventional" and "improved characteristics can be obtained". The Examiner acknowledges that Awano does not even teach the use of carbon nanotubes in contact with organic materials, but contends that "such use of such material in Awano would have been obvious since Awano is not limited to a particular semiconductor material".

Awano discloses the use of nanotubes to enhance the conductive properties and strength of vias. Lyons et al. is not directed to or concerned with vias. Rather, Lyons et al. is directed to organic memory cells containing an organic semiconductor layer and a passive layer. One skilled in the art would not be motivated to combine the memory cells of Lyons et al. with the devices comprising vias and nanotubes of Awano. Furthermore, one skilled in the art would not be motivated to modify the passive layer (114) of Lyons et al. to include a carbon nanotube, since such a modification would render the device of Lyons et al. unfit for its intended purpose. There is no motivation, either in the references themselves or in the knowledge generally available in the art, to make the proposed combination.

Thus, Rejection (1) amounts to clear error on the Examiner's part, and withdrawal of Rejection (1) is respectfully requested.

Dated: JUL 11 2007

Respectfully submitted,

By   
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